

Exploring Kafka Connect Architecture



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TECH LEAD @ AXUAL

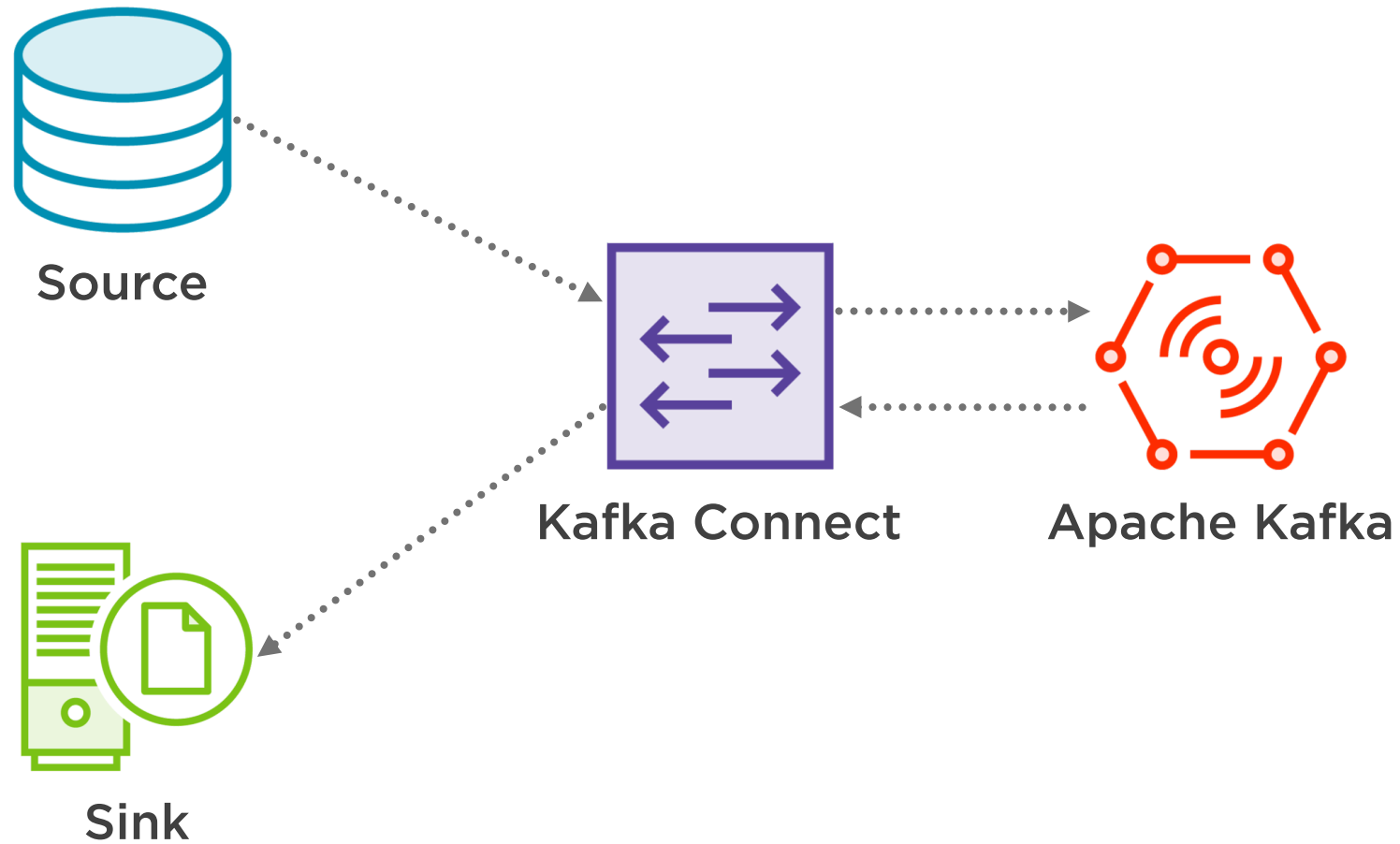
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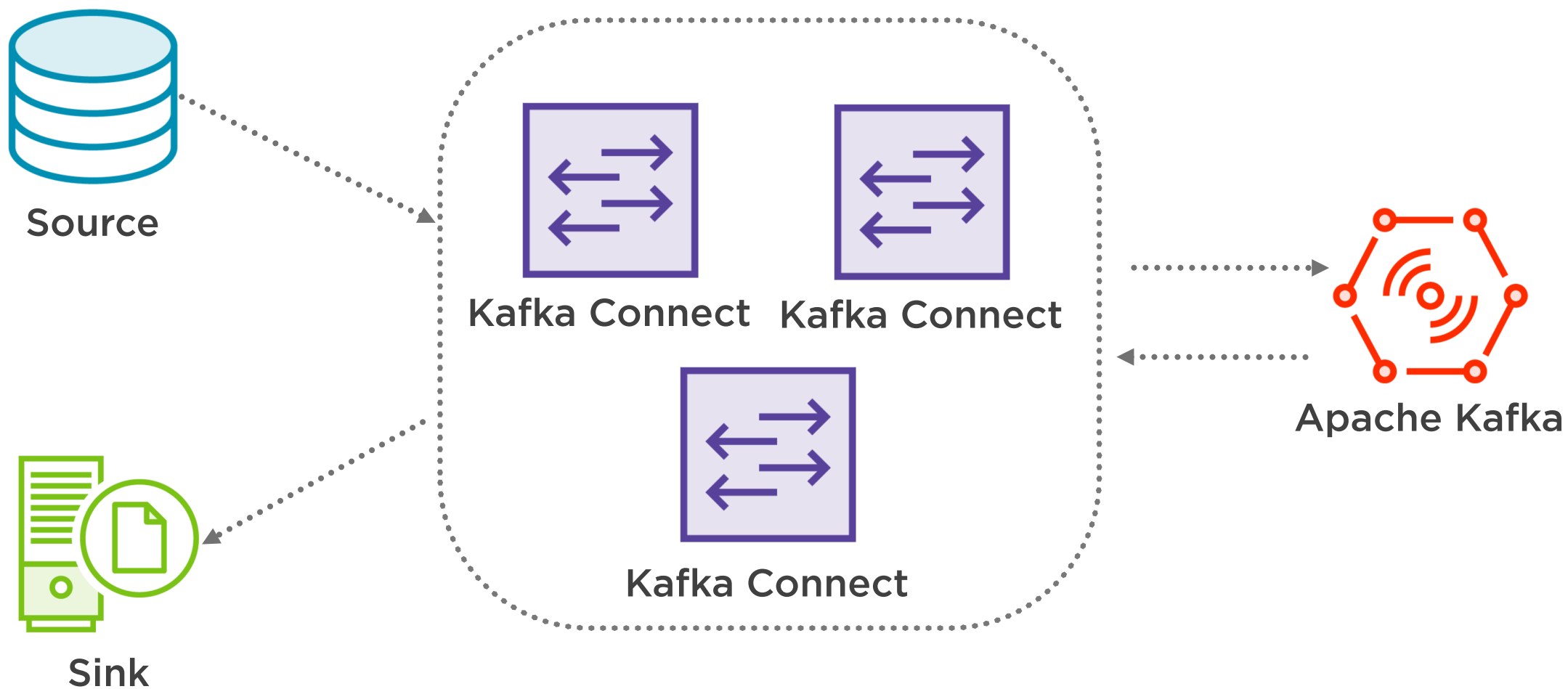
Data Flow



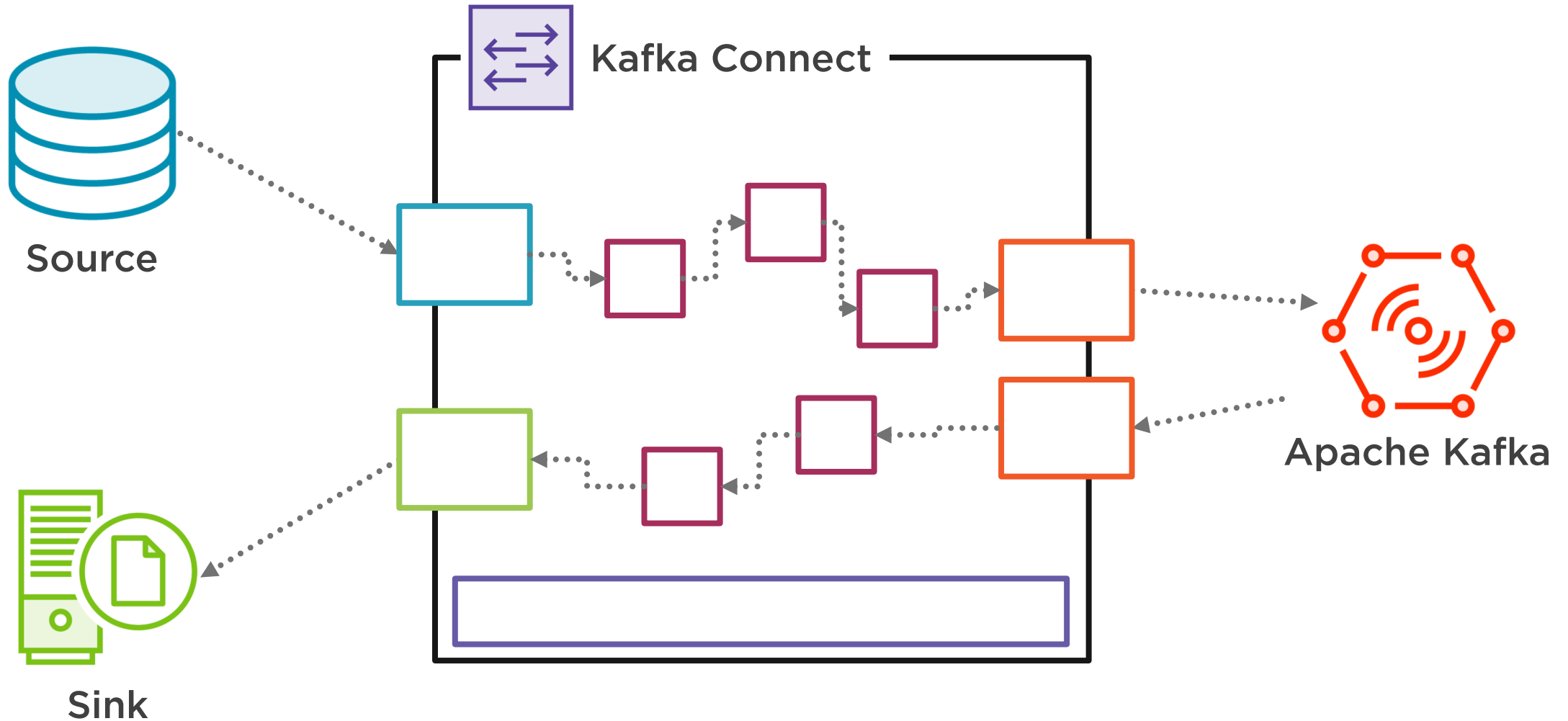
Kafka Connect Architecture



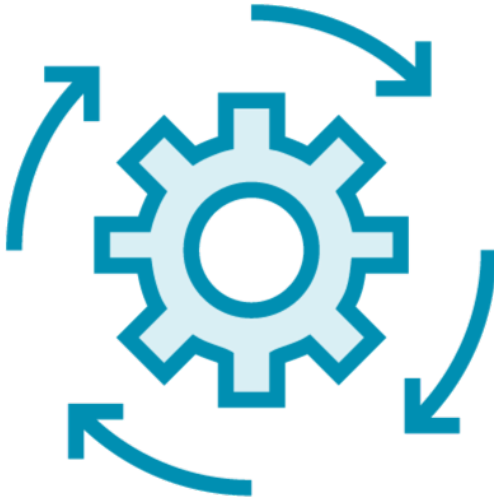
Kafka Connect Architecture



Kafka Connect Architecture



Kafka Connect



Streaming

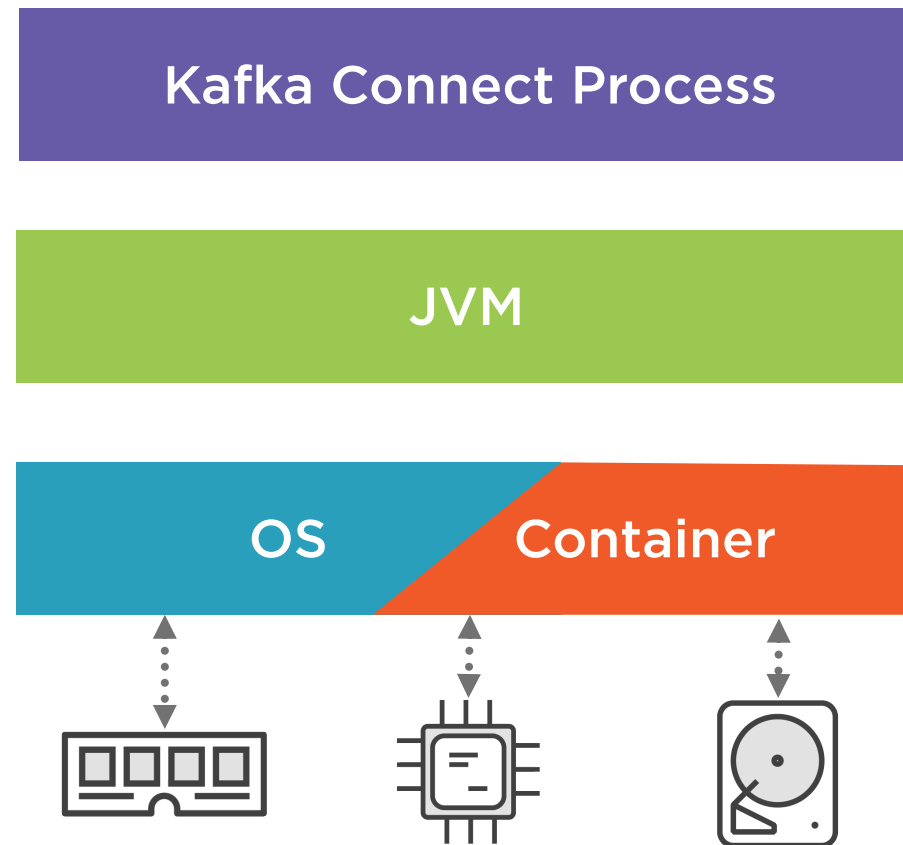


Batching

Workers



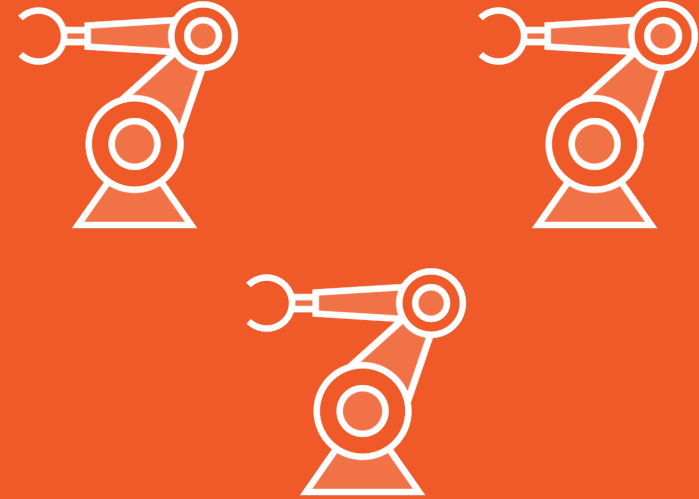
Kafka Connect Worker





Standalone

All work is performed in a single process



Distributed

Work is shared and balanced across multiple nodes



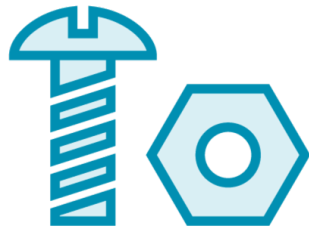
Kafka Connect Worker(s)



Standalone

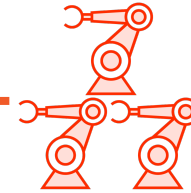


Deploy



Maintain

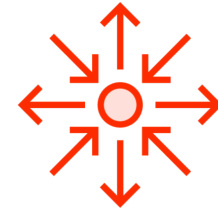
Development Environments



Distributed (Cluster)



Fault Tolerant

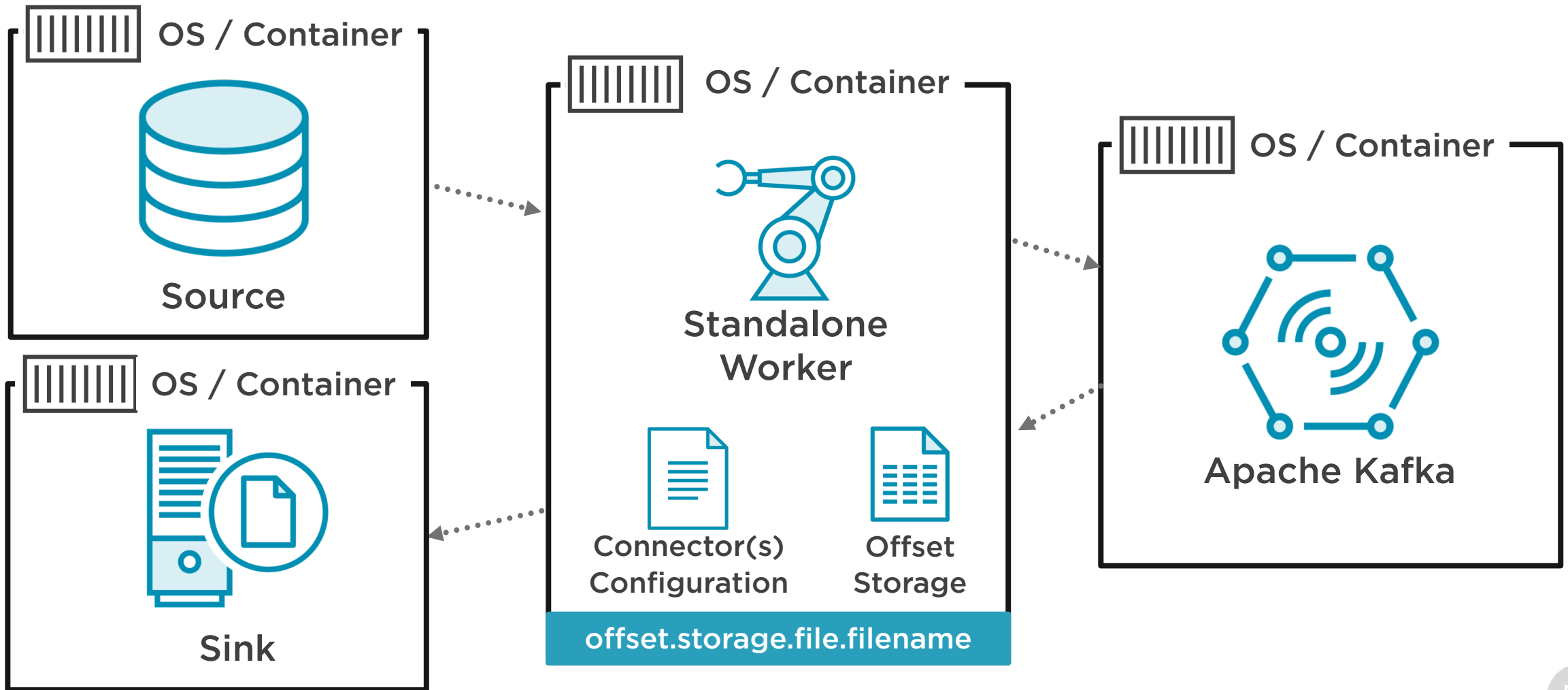


Scalable

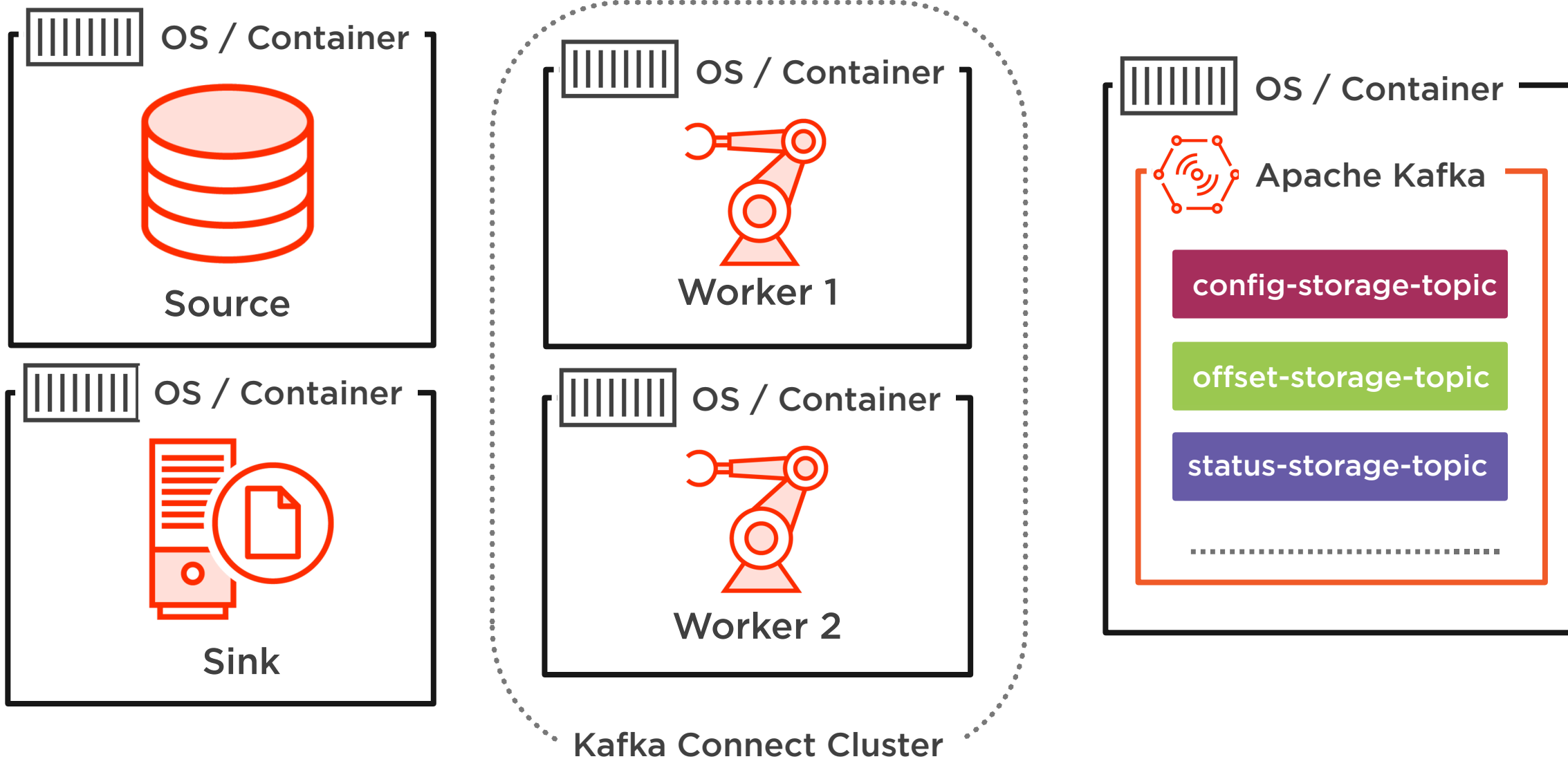
Production (Like) Environments



Kafka Connect Standalone



Kafka Connect Distributed



Connectors

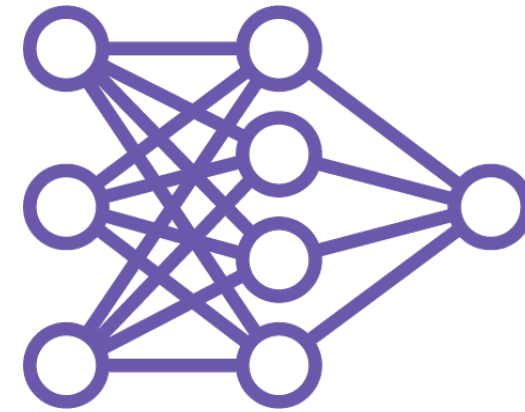


Connectors



Connector (Plugin)

An **adapter** that allows connecting to/from a common system

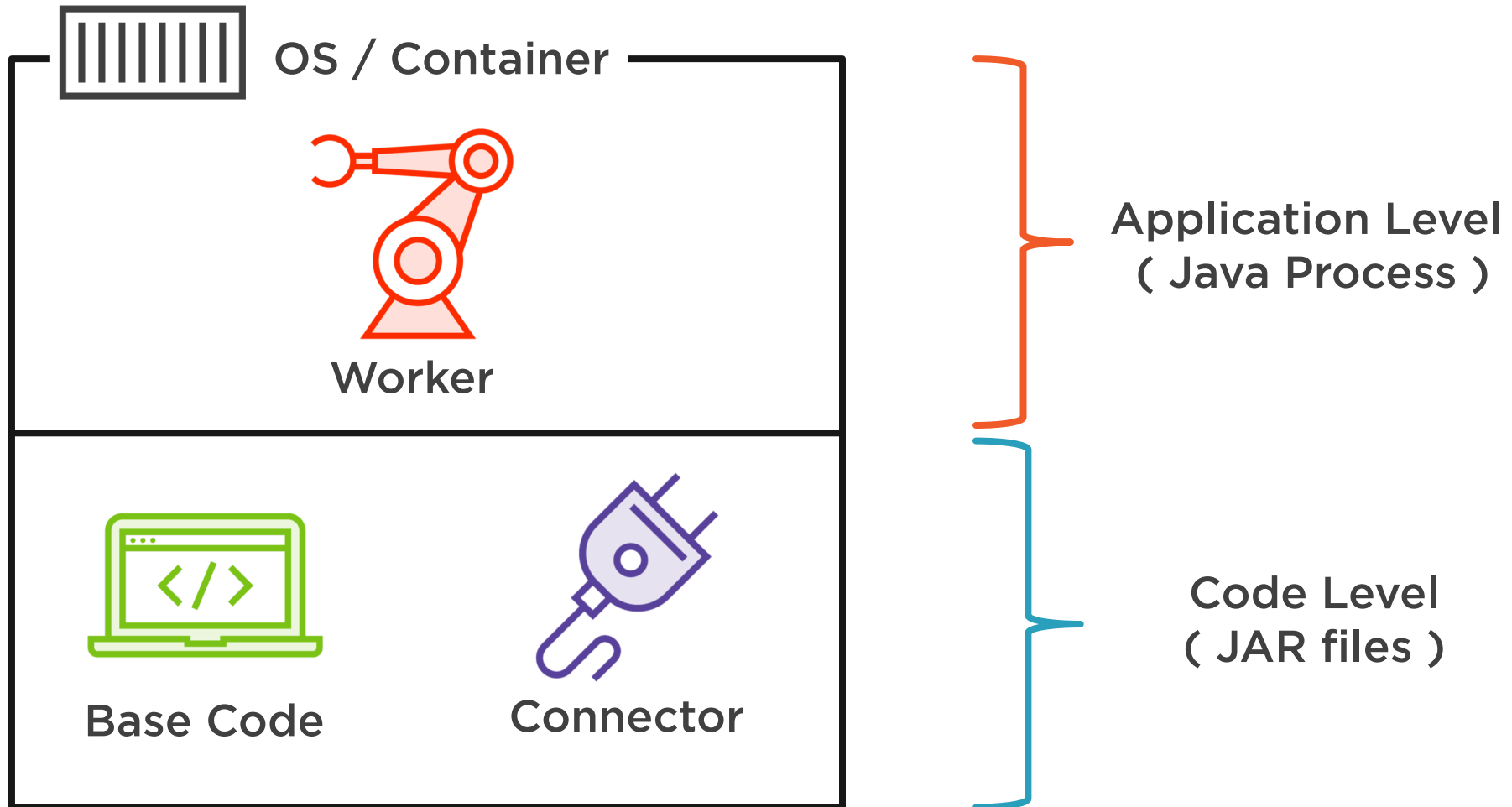


Connector (Instance)

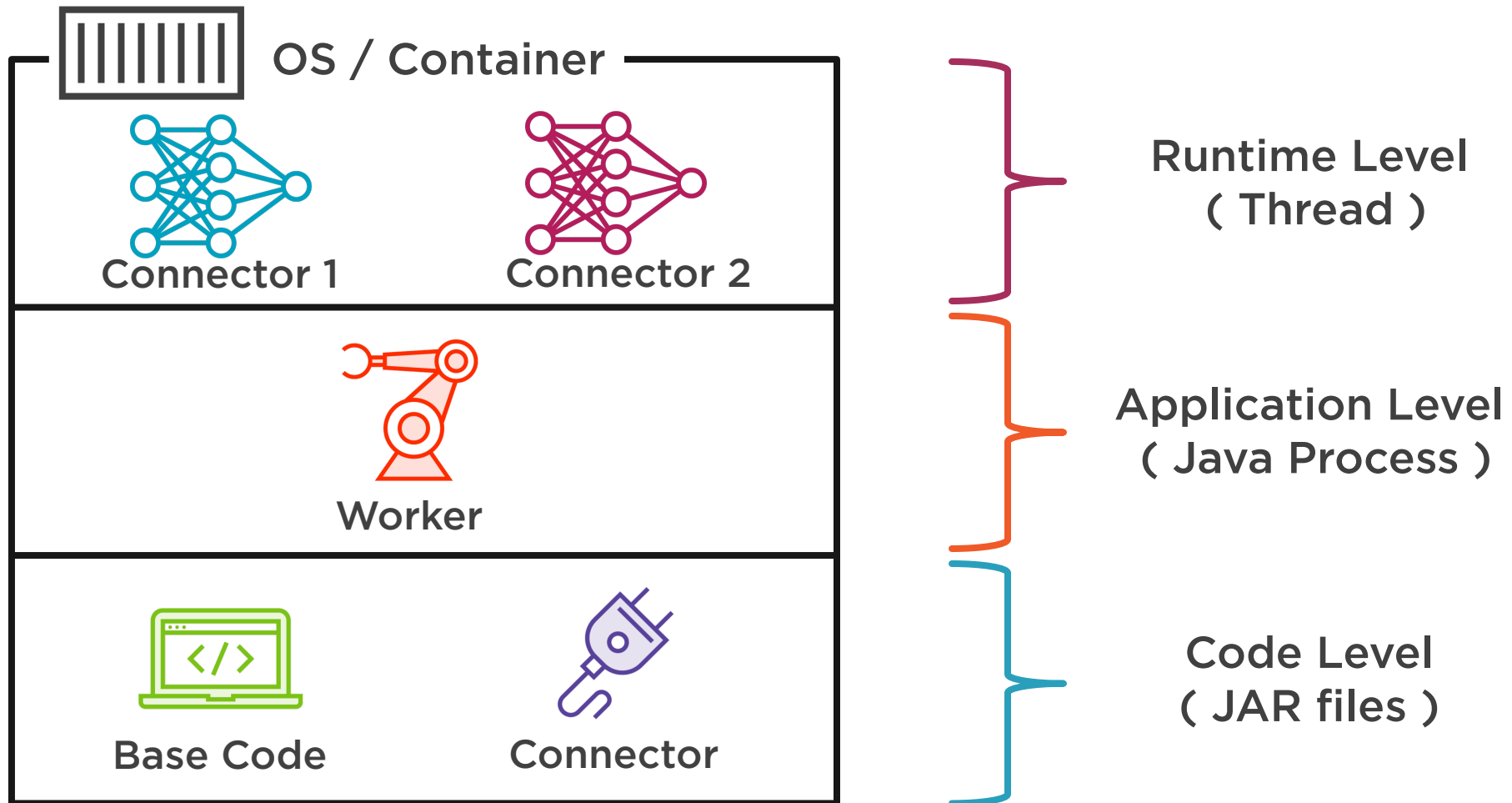
A **job** that enables the exchange of data between Kafka and other systems



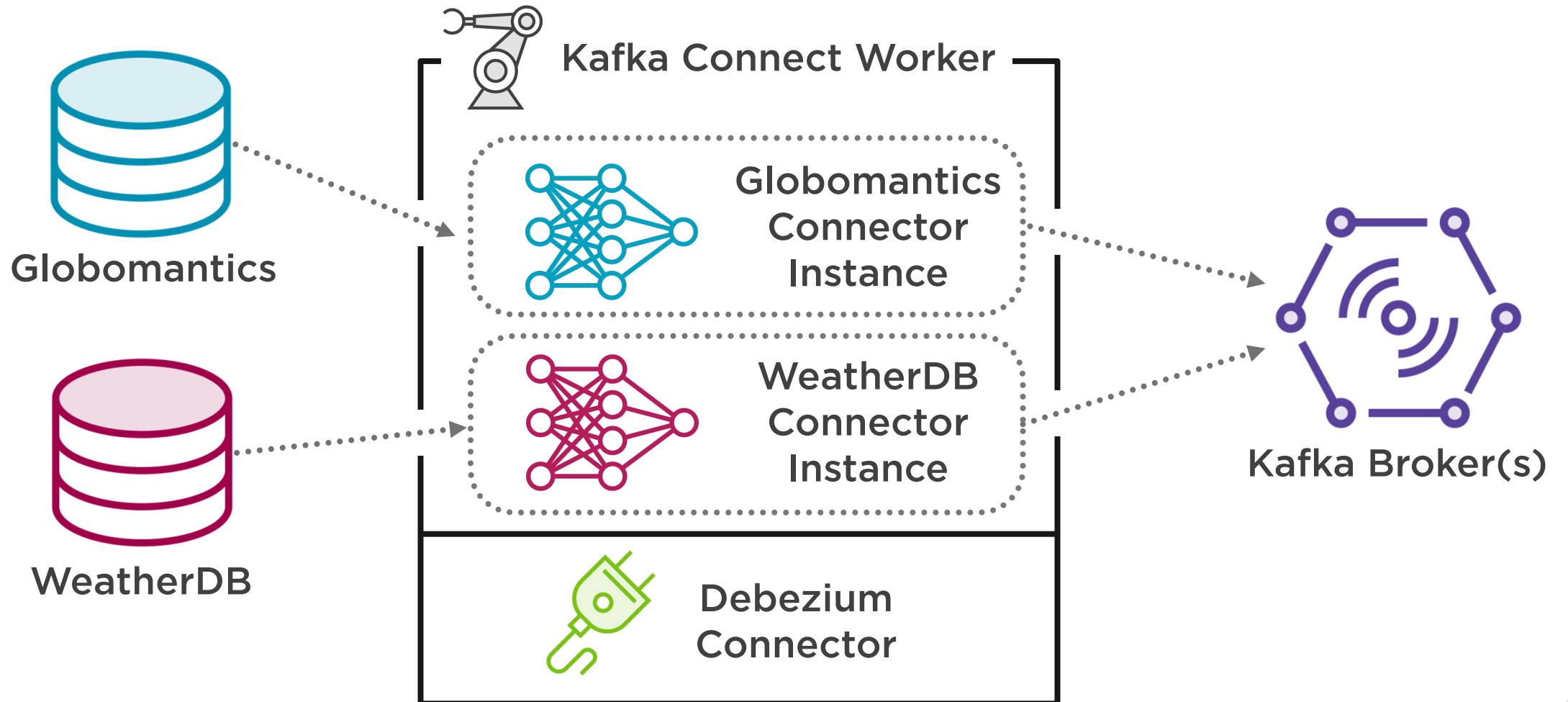
Connectors



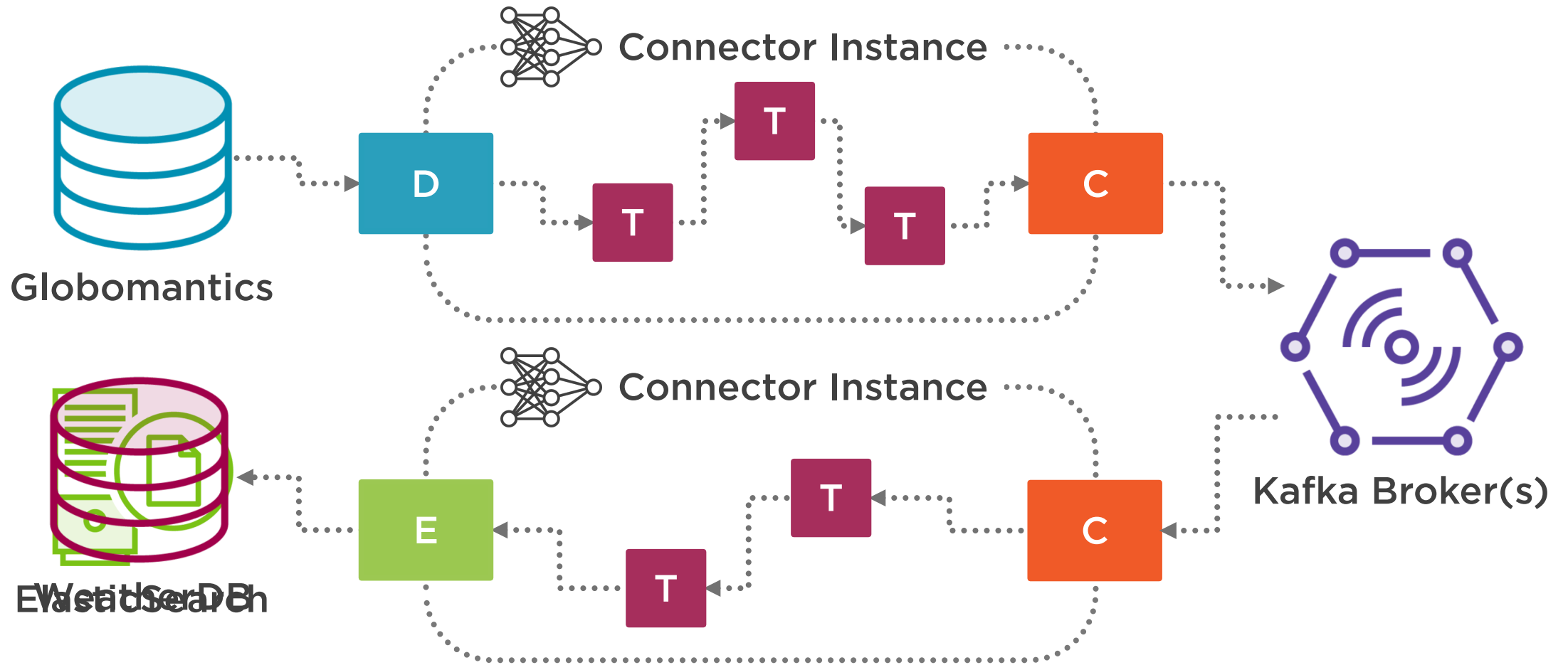
Connectors



Connectors



Connectors



- Debezium Connector



- ElasticSearch Connector



- Single Message Transform (SMT)



- Converter



Demo



Set up Elasticsearch

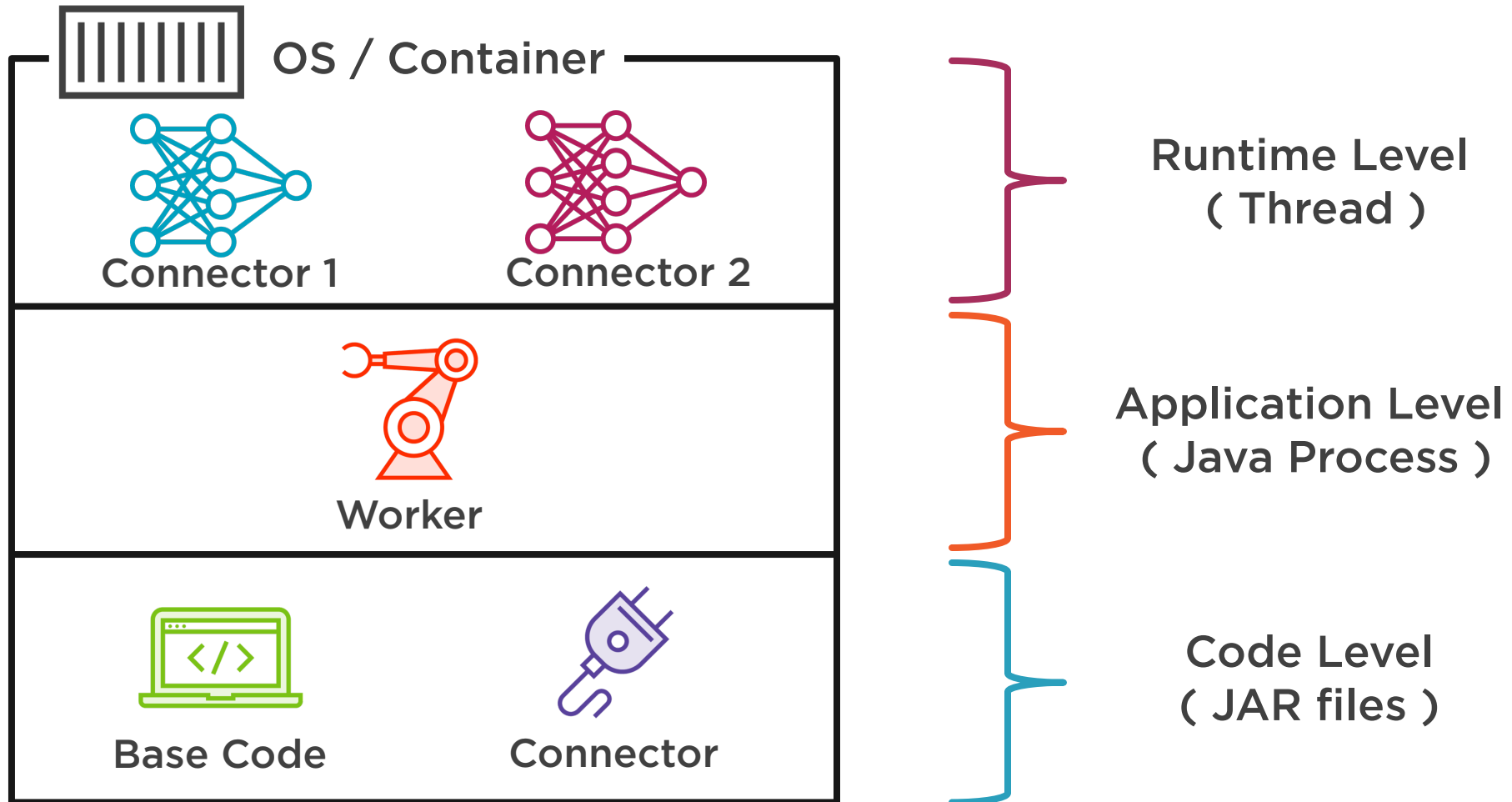
Add Elasticsearch Sink Connector



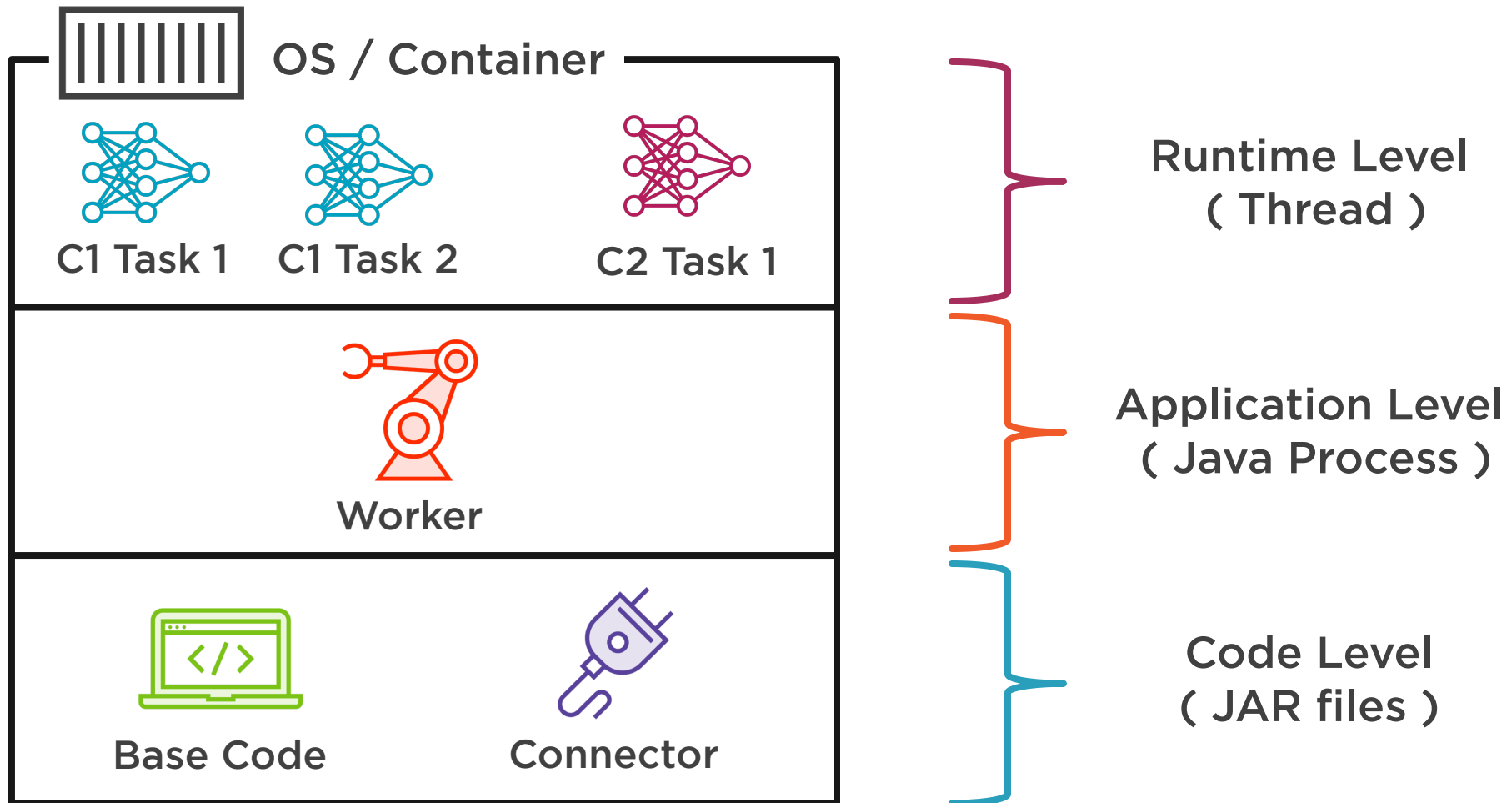
Tasks



Connectors



Tasks





Kafka Connect



Apache Kafka

Connector
(Instance)



Topic

Tasks

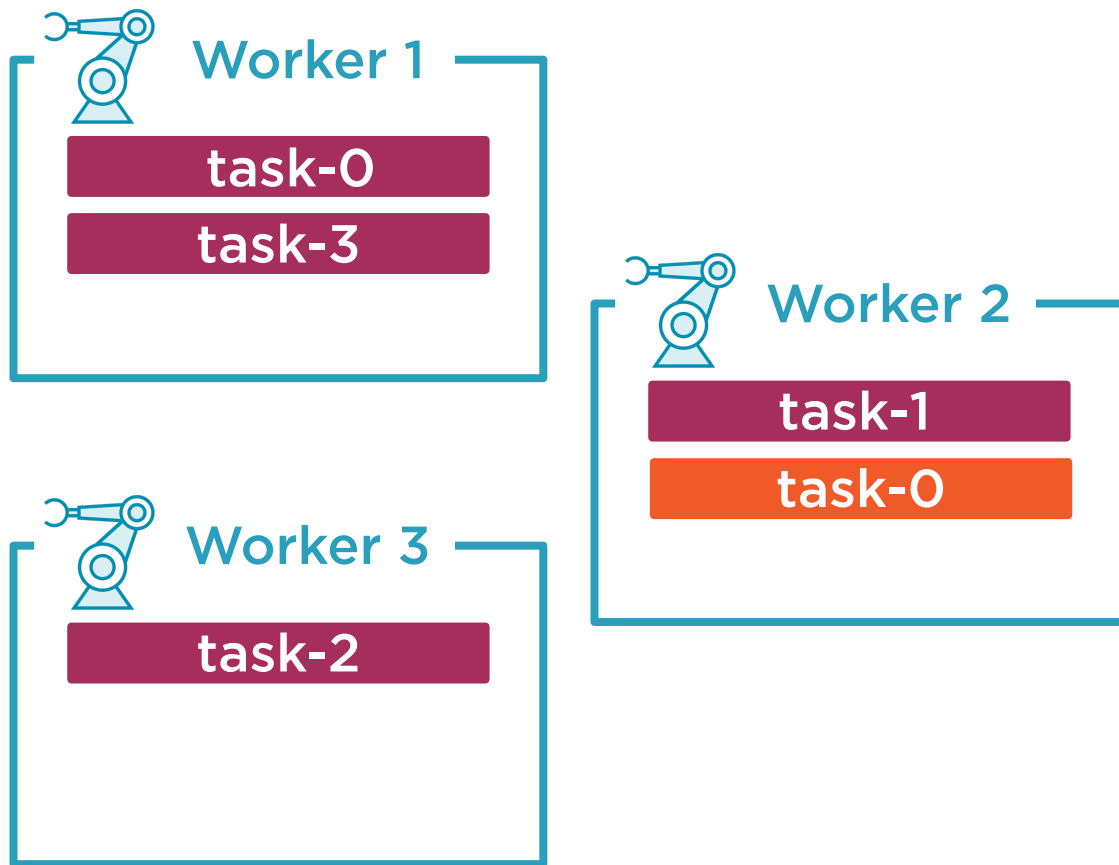


Partitions

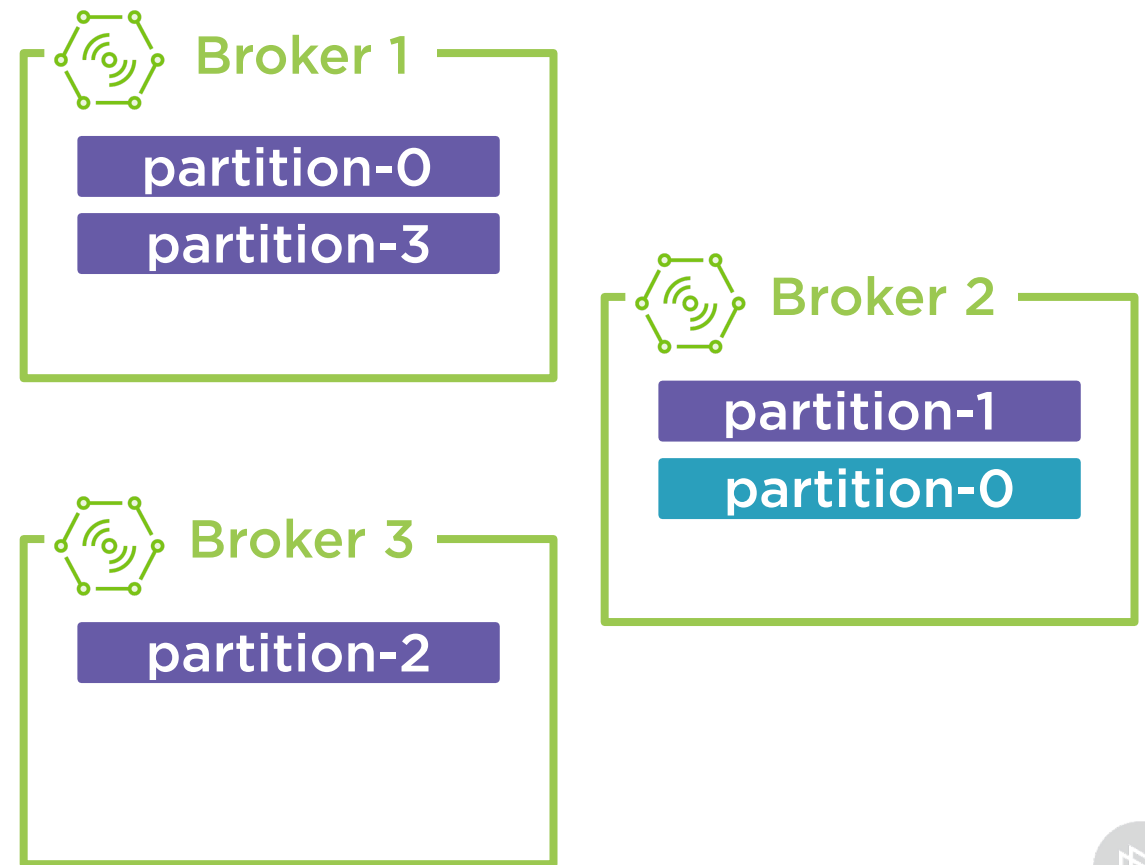


Tasks

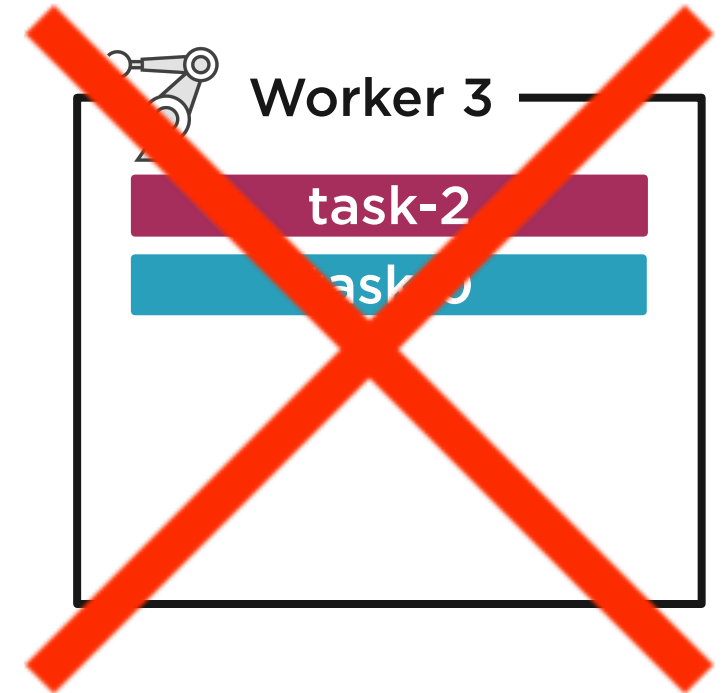
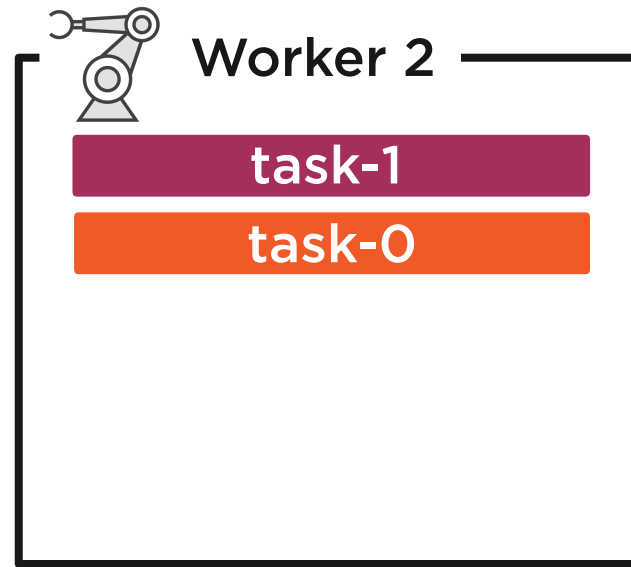
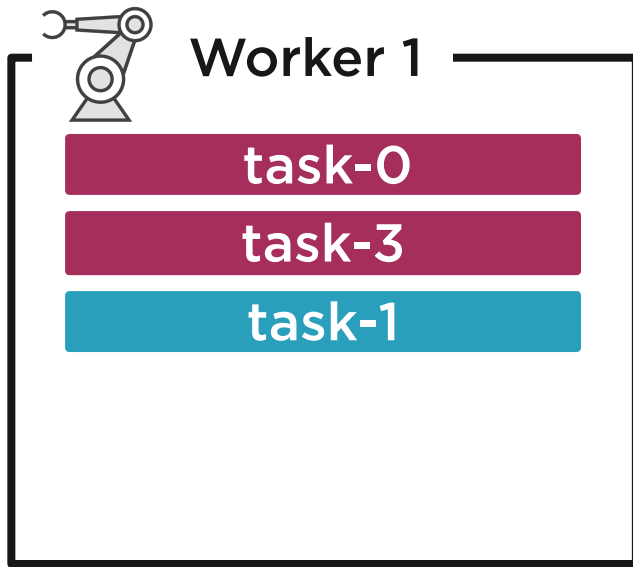
Kafka Connect



Apache Kafka



Tasks Rebalancing



■ - Connector 1 Instance
■ - Connector 1 Instance 2

■ - Connector 2 Instance



Demo



Changing the number of workers

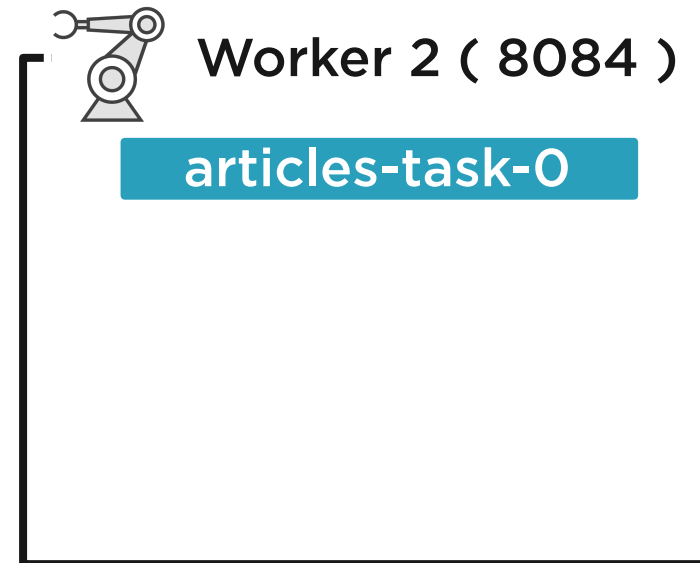
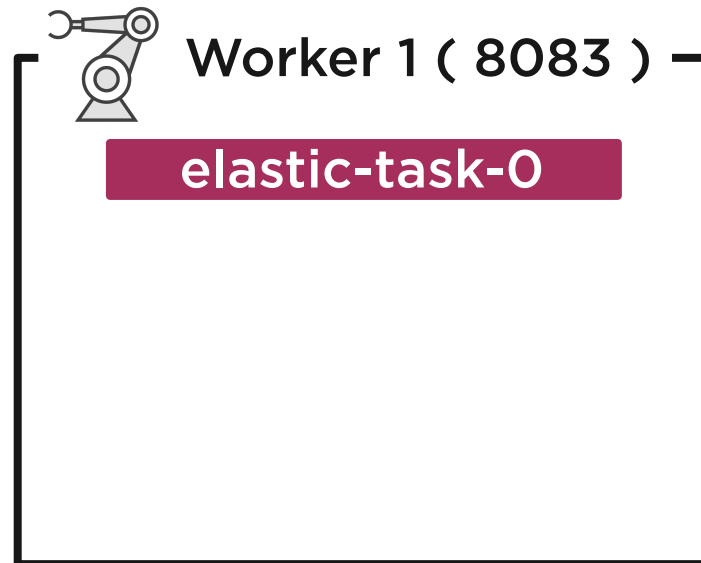
Tasks rebalancing

REST Client:

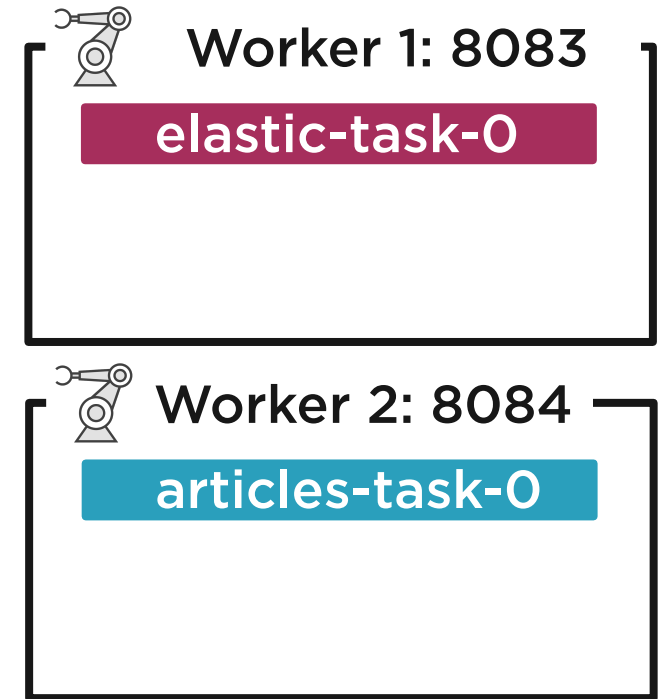
- Insomnia
- Postman



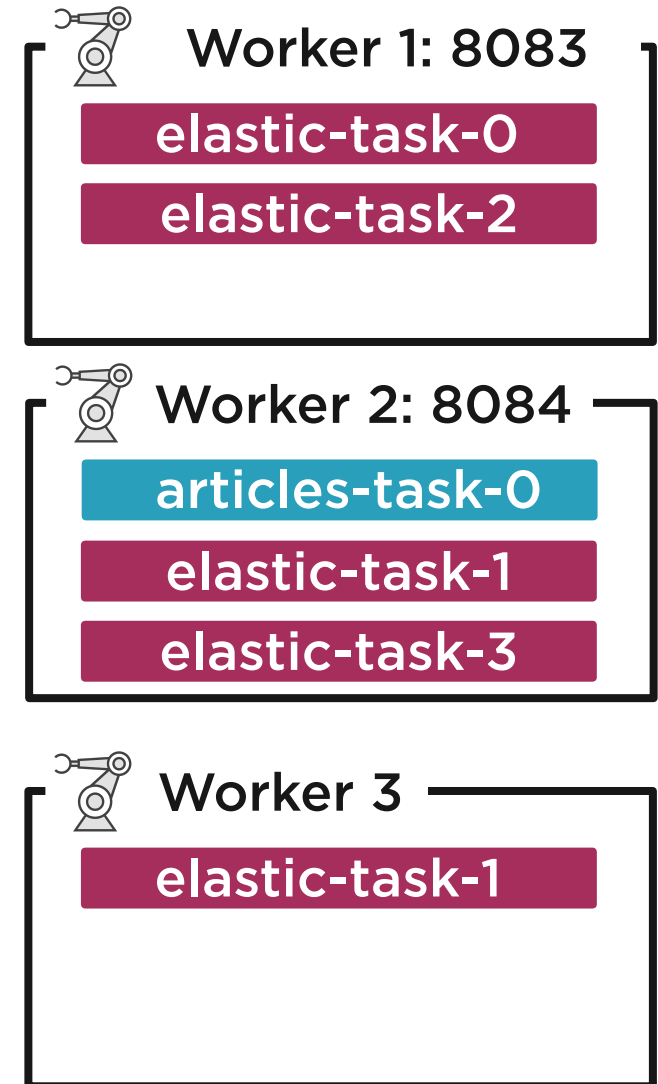
Tasks Rebalancing



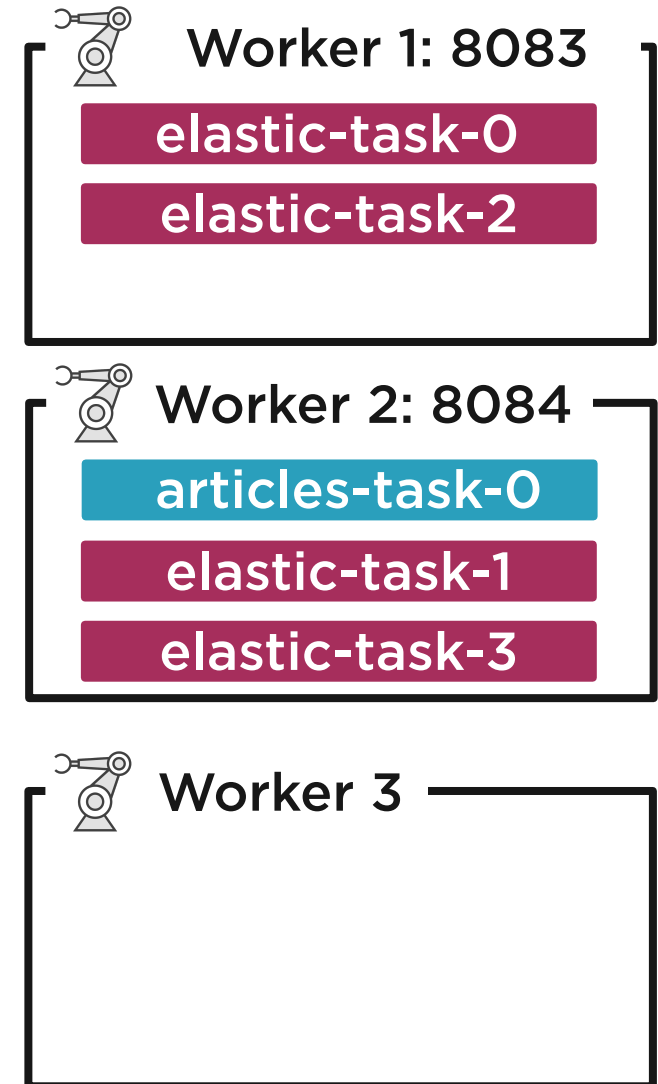
Tasks Rebalancing



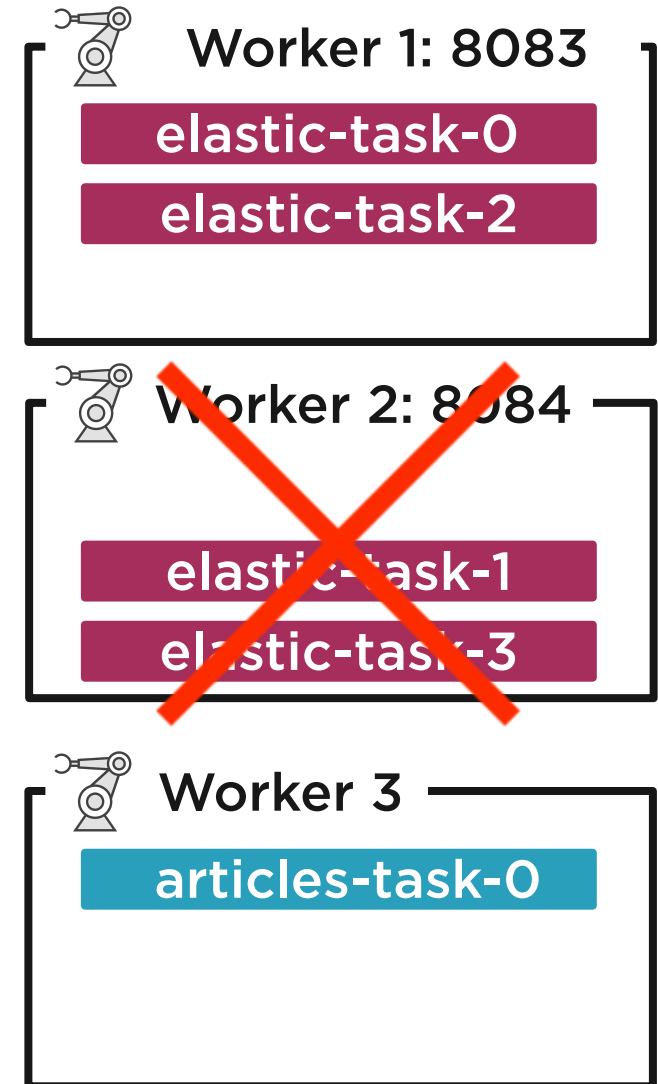
Tasks Rebalancing



Tasks Rebalancing



Tasks Rebalancing



Summary



Kafka Connect Architecture

Workers

Connectors

Tasks

